Appendix 3

Memorandum

K J S *Associates, Inc.*

DATE: July 23, 1998

TO: Roosevelt Committee

FROM: Michael J. Read, KJS Associates
Jennifer G. Ting, KJS Associates

RE: Roosevelt Way NE/12th Avenue NE: Alternative Roadway Configurations

This memorandum briefly summarizes our analysis of the one-way couplet versus two-way street system on Roosevelt Way NE and 12th Avenue NE between NE 75th Street and NE Ravenna Boulevard in the Roosevelt neighborhood.

Methodology

The City of Seattle's travel demand forecasting model was used to generate base year 1990 peak hour traffic volumes under the one-way couplet and two-way street systems. The forecasting model also generated 2010 peak hour traffic volumes under the one-way couplet and two-way system.

The computerized forecasting tool EMME/2 is used to generate future traffic volumes and is based upon estimates of existing and future population and employment. Future intersection turning movements were estimated from a comparison and evaluation of traffic forecasts in the vicinity of each site by using the travel demand forecasting model mentioned above. Growth factors between the 1990 existing and 2010 future regional EMME/2 forecasts were derived by KJS through a review of individual roadway segments within the study area and applied to existing 1998 traffic counts to estimate 20 10 baseline turning movement volumes.

One-Way Couplet/Two-Way Street Configurations

The one-way couplet system would remain the same as its existing configuration today. KJS supplied the City of Seattle with a sketch identifying an example two-way street configuration (shown in Figure 1). In general, 12th Avenue NE would consist of two travel lanes and parking on both sides of the street with parking restrictions on the east side of the street during the p.m. Roosevelt Way NE would consist of two travel lanes and parking on both sides of the street with restrictions on the west side of the street during the a.m.

Results of Traffic Model

The traffic model showed no significant change in traffic volumes between the one-way couplet and two-way street configuration. In other words, total traffic volumes would be relatively similar on many roadways, with vehicles simply changing travel patterns. There would be a slight diversion of traffic from the University District to I-5, but not a significant amount, suggesting no change in I-5 cut-through traffic through the neighborhood.

Future Intersection Levels of Service

Level of service analyses was performed at key intersections in the site vicinity for the year 2010. Table 1 summarizes intersection levels of service for the p.m. peak period at all nearby significant intersections.

All of the intersections under the one-way couplet system except for the intersection of Roosevelt Way NE at NE 73rd Street would operate at LOS B. The intersections under the two-way street system would operate at LOS D or better except for the Roosevelt Way NE at NE 73rd Street intersection. The level of service under a one-way couplet system is better than a two-way street system because there are little or no conflicts with opposing vehicular movements.

The intersection of Roosevelt Way NE at NE 73rd Street would operate at LOS F in the year 2010 under both the one-way couplet and two-way street systems. An evaluation of the potential need for a traffic signal at this intersection (to improve its overall safety and/or operation) was conducted based upon procedures and guidelines found in the 1988 Manual on *Uniform Traffic* Control Devices (MUTCD: Section 4C-2 Warrants for Traffic Signal Installation). Future peak period volumes meet signal warrants (Section 4C-10.3, Warrant 11, Peak Hour Volume) with a major street approach of 785 vehicles and a minor street approach of 539 vehicles. The intersection would operate at LOS C with a fully actuated signal.

Table 1: Future Intersection Levels of Service (PM Peak)

Intersection	1998 Existing Conditions (One-Way Couplet)	2010 Future Conditions (One-Way Couplet)	2010 Future Conditions (Two-Way Street)
12th Avenue NE at NE 75th Street	LOS B (SIG - 8 secs)	LOS B (SIG - 9 secs)	LOS B (SIG - 14 secs)
12th Avenue NE at NE 65th Street	LOS B (SIG - 9 secs)	LOS B (SIG - 10 secs)	LOS D (SIG – 28 secs)
Roosevelt Way NE at NE 75th Street	LOS B (SIG - 8 secs)	LOS B (SIG - 8 secs)	LOS D (SIG - 25 secs)
Roosevelt Way NE at NE 73rd Street	LOS E (UNSIG - 44 secs)	LOS F (UNSIG > 60 secs)	LOS F (UNSIG > 60 secs)
	Install Signal	LOS B (SIG - 9 secs)	LOS c (SIG - 17 secs)
Roosevelt Way NE at NE 65th Street	LOS B (SIG - 8 secs)	LOS B (SIG - 9 secs)	LOS c (SIG -18 secs)

LOS A-F average intersection LOS.
(XX) - Average delay per vehicle of the critical intersection movement (in seconds) and level of service for critical movement.
SIG - Signalized.
UNSIG~ Unsignalized.

Two-Way Street System Issues

Issues to address under the two-way street system include:

- Parking would not be provided on Roosevelt Way NE next to the Safeway between NE 74th Street and NE 75th Street to provide for adequate travel lanes. The configurations at the intersections of Roosevelt Way NE at NE 75th Street and Lake City Way NE at NE 75th Street would be changed (shown in Figure 2).
- The intersection of NE 65th Street and 12th Avenue NE would consist of northbound and southbound left-turning lanes to improve the overall safety and operation of the intersection. Thus, on-street parking would be restricted on the northbound and southbound intersection approaches near the intersection (see Figure 3).
- The two-way configuration of Roosevelt may require turn pockets at the NE 65th Street intersection or restrictions of left turns. Mid-block and intersection pedestrian crossing treatments could facilitate a walking environment.
- Should curb bulbs still be constructed? If so, should it be located on both sides of the street or on one side of the street? Construction on one side of the street would facilitate pedestrian movement and accommodate turning movements as well.

Advantages of the Two-Way Street System

1. Provide the Roosevelt neighborhood with an improved pedestrian atmosphere.
2. It would reduce traffic speeds since drivers would now have to be concerned with turning vehicles.
3. It would benefit the business district since parking would be provided all day on one side of Roosevelt Way NE.
4. It would improve local circulation (cars don't have to make so many loops to get to their destination).
5. Curb bulbs may only be installed in places where there is no restricted parking.
6. Parking would

Disadvantages of the Two-Way Street System

1. Congestion would increase due to an increase in turning movement conflicts.

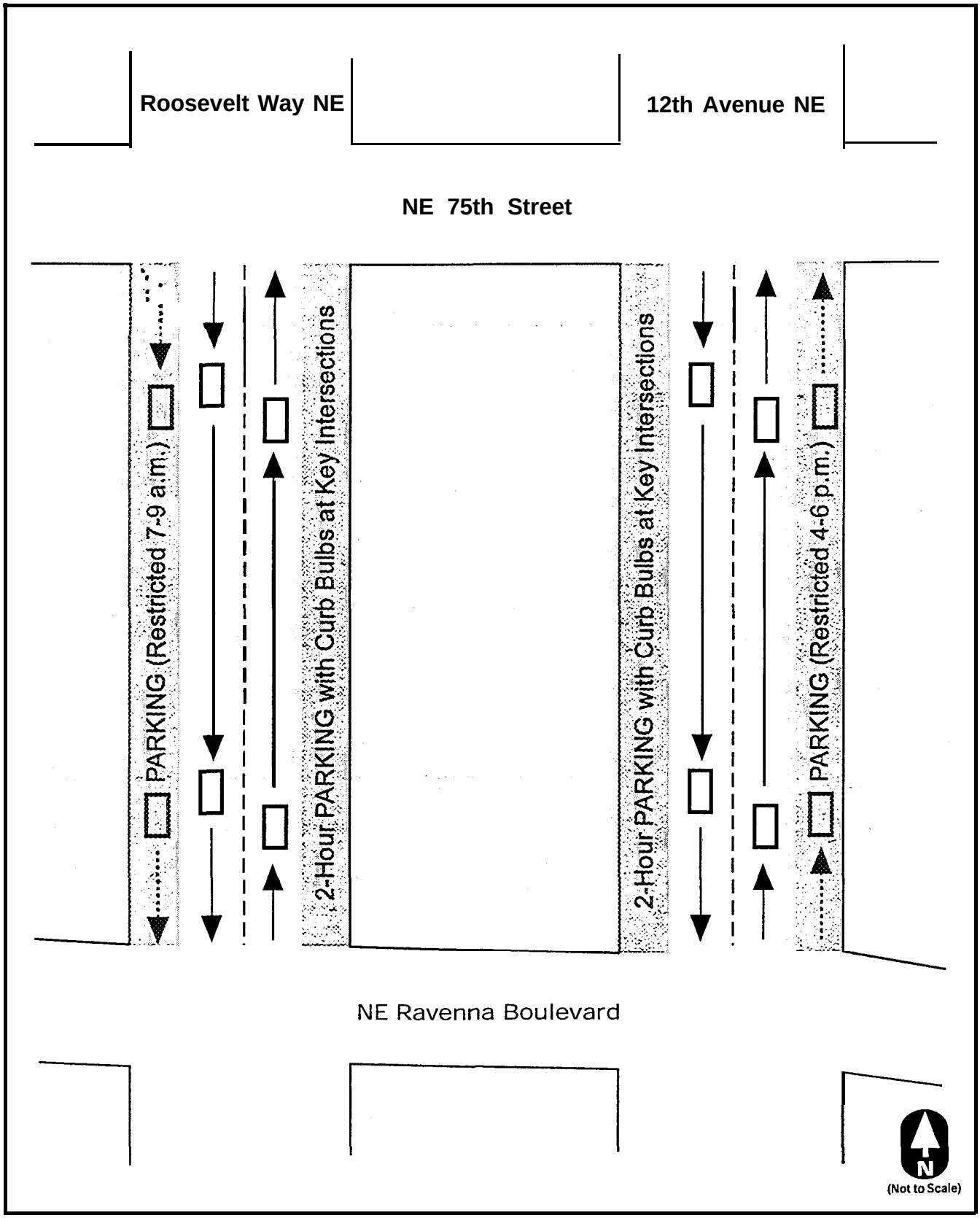


Figure 1. Proposed Two-Way Street System General Configuration

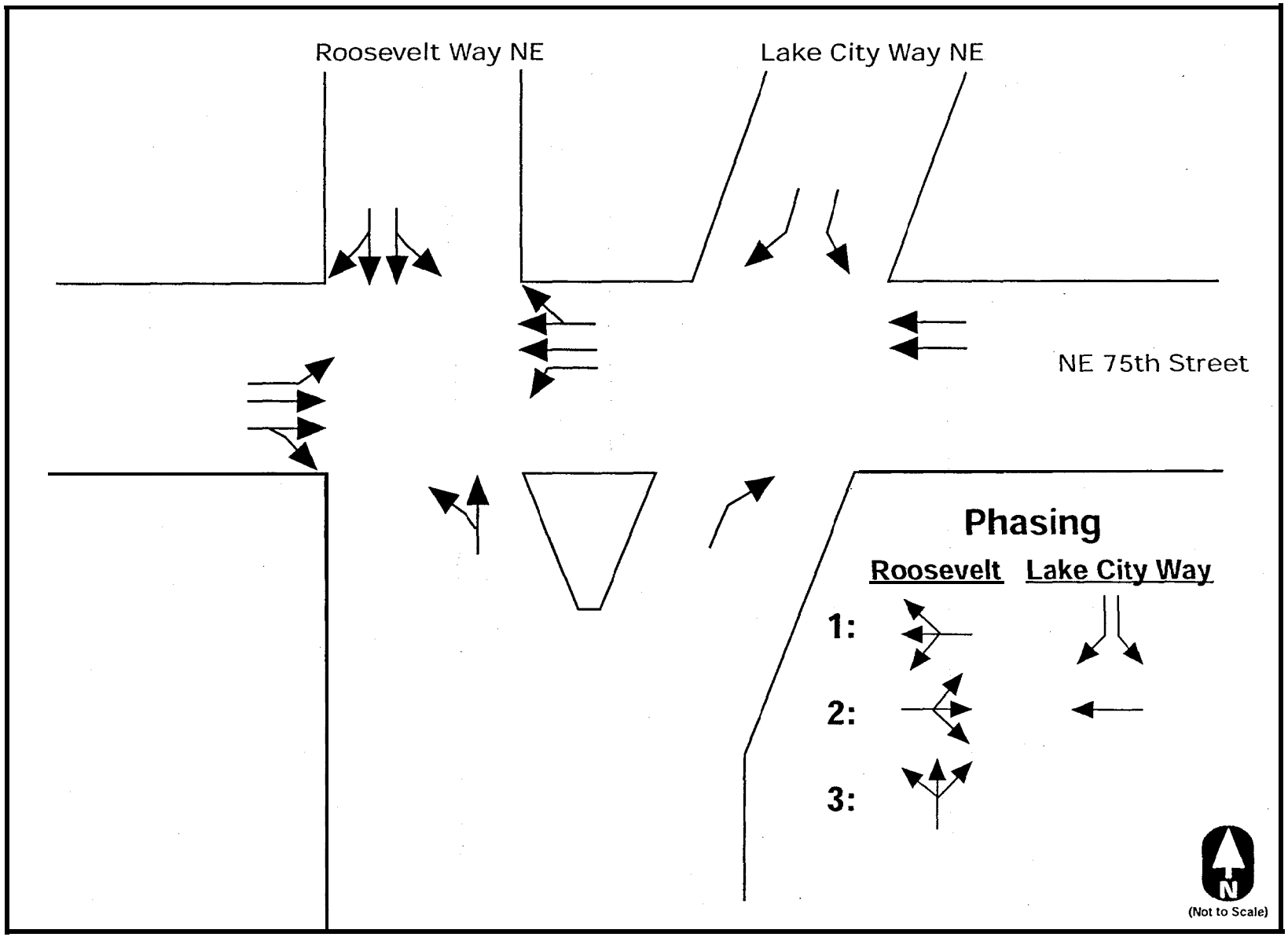
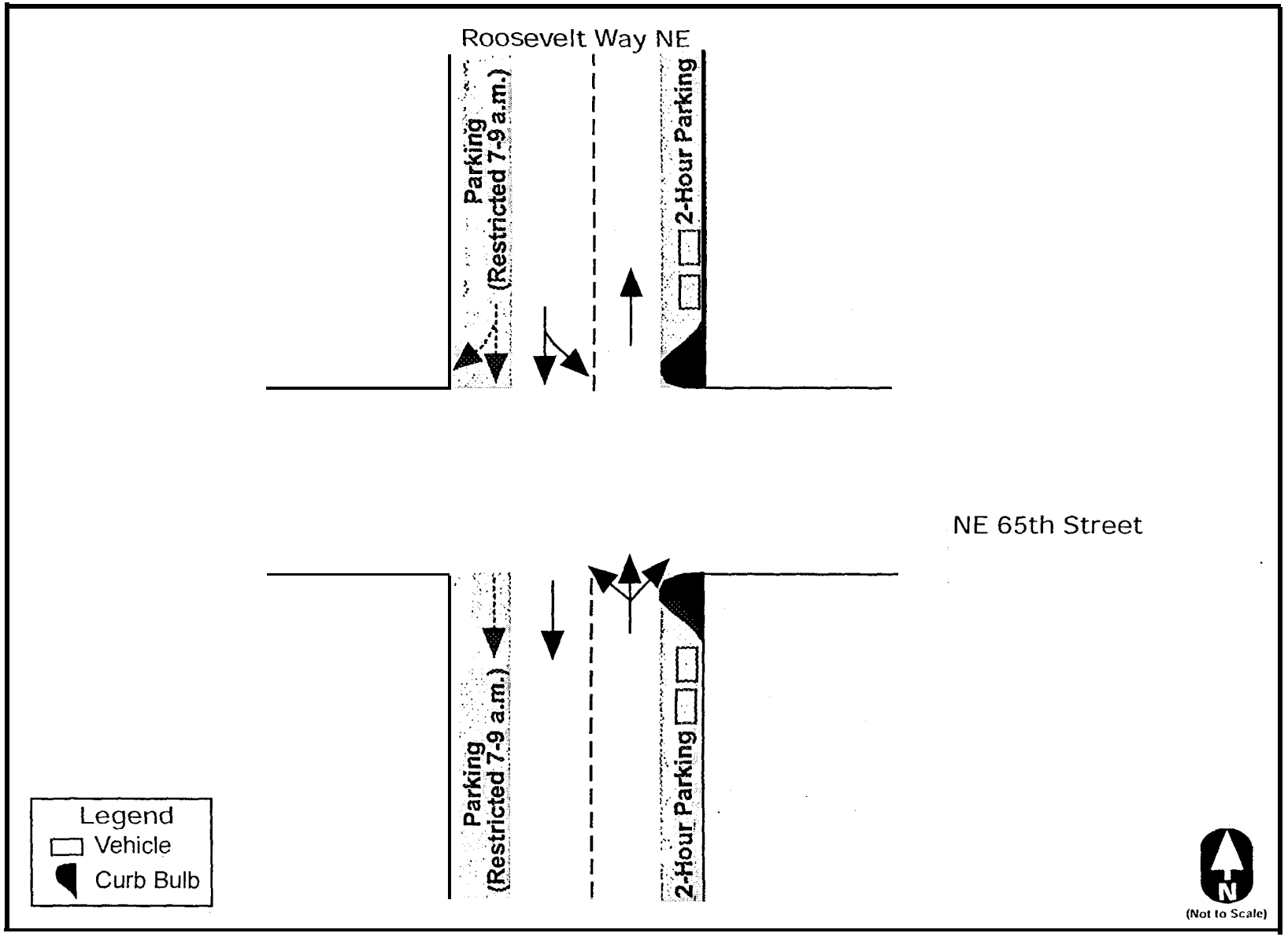


Figure 2. Roosevelt Way NE/NE 75th Street/Lake City Way NE Configuration


Roosevelt Way NE
Parking (Restricted 7-9 a.m.)
2-Hour Parking
NE 65th Street
Parking (Restricted 7-9 a.m.)
2-Hour Parking
Legend
Vehicle
Curb Bulb
N
(Not to Scale)

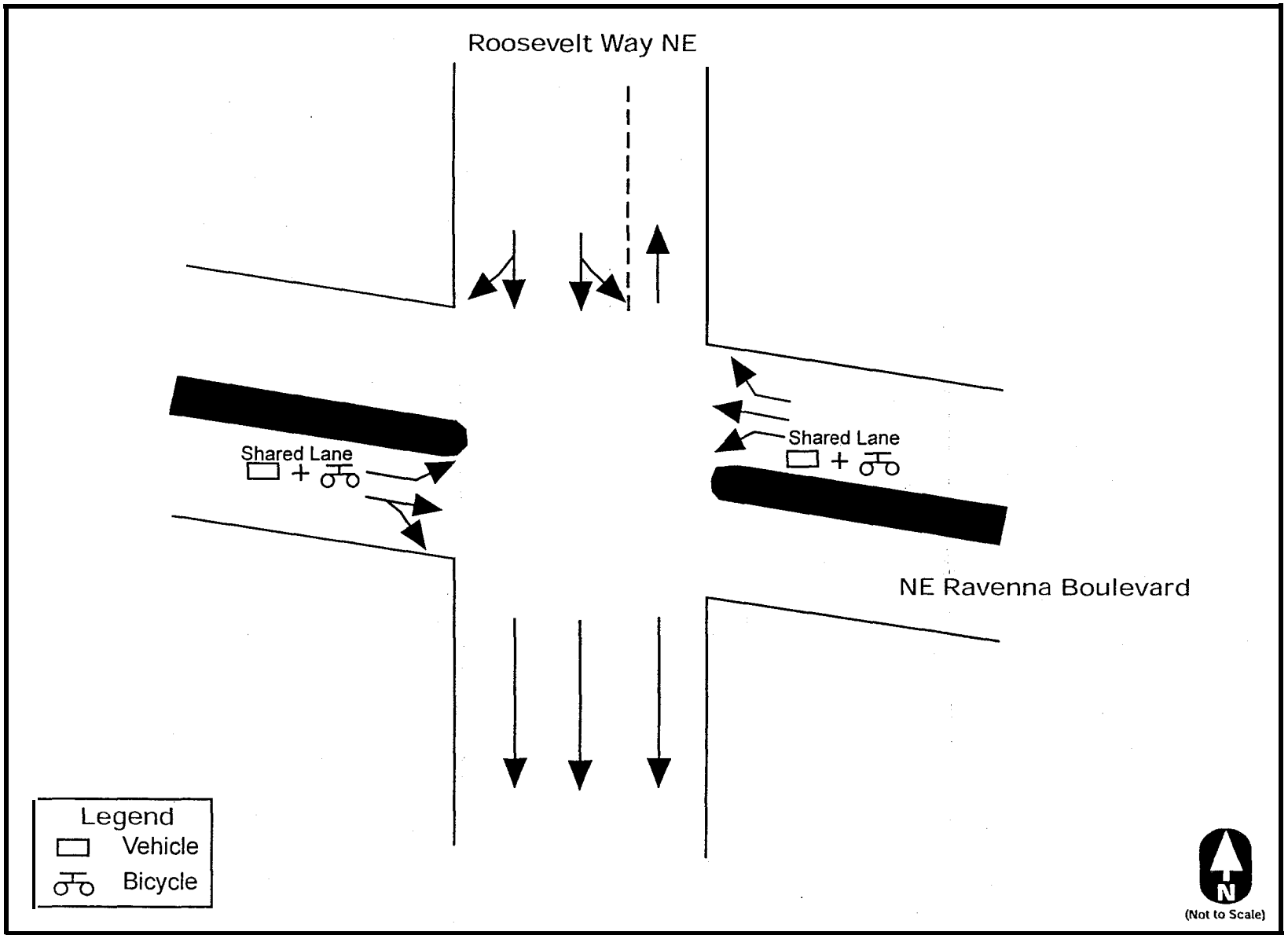


Figure 4. Roosevelt Way NE/NE Ravenna Boulevard Configuration

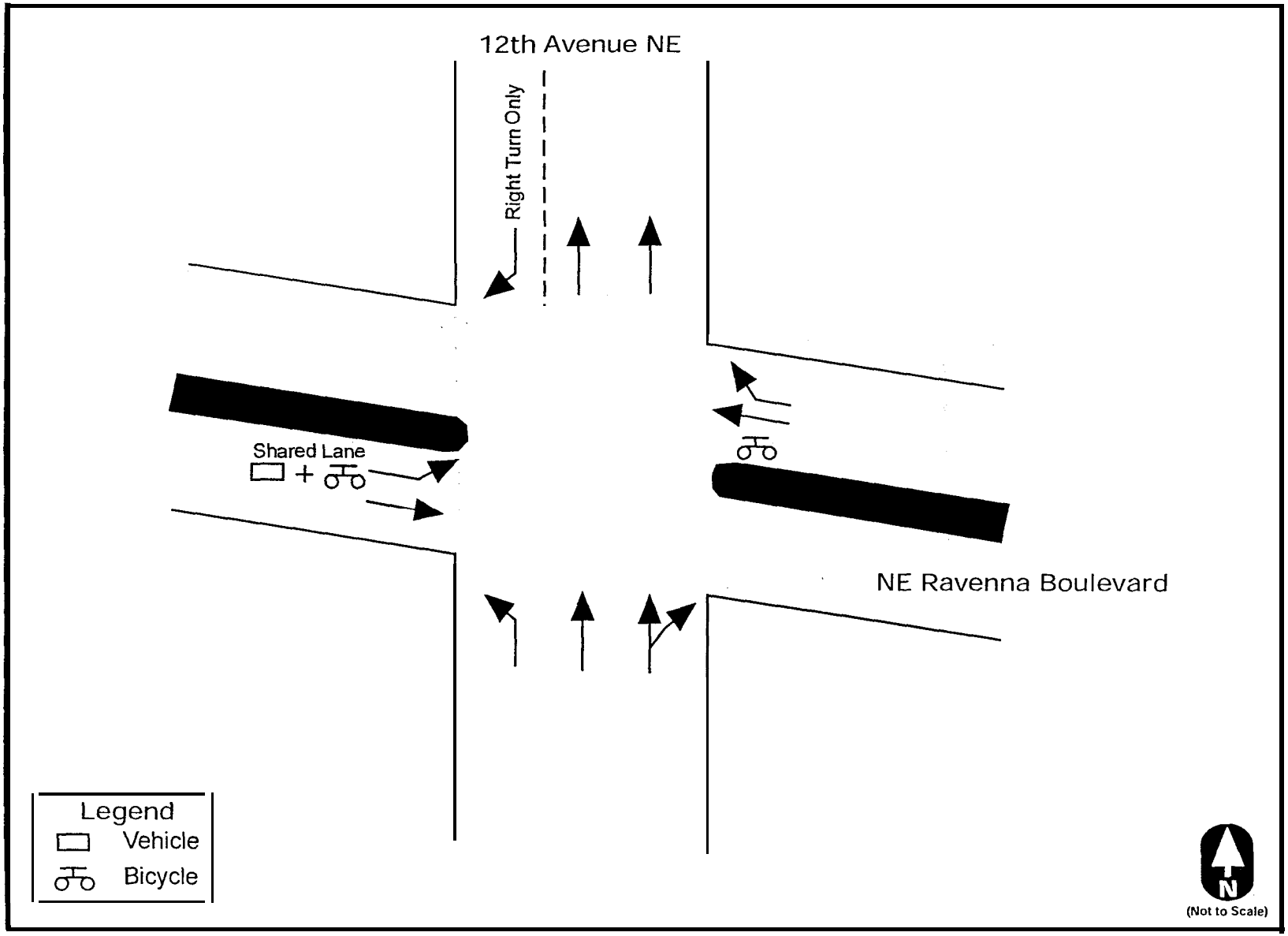


Figure 5. 12th Avenue NE/NE Ravenna Boulevard Configuration